

Title (en)
Position sensor.

Title (de)
Positionssensor.

Title (fr)
Capteur de position.

Publication
EP 0418712 A1 19910327 (DE)

Application
EP 90117541 A 19900912

Priority
DE 3930958 A 19890916

Abstract (en)
[origin: JPH03107359A] PURPOSE: To improve reliability of positional detection by arranging a coil with a core, made of a magnetic material at a gap between a stator and a rotor, allowing an AC current with a frequency larger than that of the rotor to flow into the coil, and arranging a permanent magnet material and a non- magnetic material at a part that is close to the coil of the rotor and at the opposite side, respectively. CONSTITUTION: Coils 6 and 7 with cores 8 and 9 which are made of ferrite are arranged at a gap 5 between a rotor 3 and a stator 1. Also, a permanent magnetic material 4 and a non-magnetic material 10 are arranged at the semi- periphery side of a part, where the coils 6 and 7 of the rotor 3 approach and at a semi-periphery at the opposite side, respectively. Then, an AC current with a frequency, that is larger than the rotary frequency of the rotor 3, is allowed to flow into the coils 6 and 7. At this time, while the rotor 3 rotates by one turn, the permanent magnetic material 4 and the non-magnetic material 10 pass alternately, thus generating a change in the level of a voltage drop generated at the coils 6 and 7. The change is used for detecting the angular position of the rotor 3 and for controlling a communication circuit 11, thus enabling detection of the angular position of the rotor.

Abstract (de)
Kollektorlose Gleichstrommotore benötigen Positionssensoren, welche die Winkelstellung des Rotors erkennen, um im geeigneten Zeitpunkt einen Impuls zur Steuerung des Spulenstroms zu geben. Hallsonden, welche in der Regel als Positionssensoren verwendet werden, weisen eine Reihe von Nachteilen auf, wie z.B. Temperatur- und Strahlungsempfindlichkeit. Um diese Nachteile zu umgehen, werden erfindungsgemäß von einem Wechselstrom durchflossene Spulen 6,7 mit magnetischem Kern 8,9 im Luftspalt 5 angebracht. Der Rotor besteht in diesem axialen Abschnitt aus einem magnetischen Teil 4 und einem unmagnetischen Teil 10. Dadurch entsteht während einer Umdrehung eine Änderung des Spannungsabfalles an den Spulen.

IPC 1-7
H02K 29/12

IPC 8 full level
H02K 1/27 (2006.01); **H02K 11/21** (2016.01); **H02K 11/225** (2016.01); **H02K 29/12** (2006.01)

CPC (source: EP US)
H02K 29/12 (2013.01 - EP US)

Citation (search report)
• [A] DE 2702190 B2 19790927
• [A] DE 1463426 B2 19730816
• [A] DE 3341733 A1 19850530 - SIEMENS AG [DE]

Designated contracting state (EPC)
AT BE CH DE FR GB IT LI NL SE

DOCDB simple family (publication)
EP 0418712 A1 19910327; **EP 0418712 B1 19931110**; AT E97271 T1 19931115; DD 295734 A5 19911107; DE 3930958 A1 19910328; DE 59003445 D1 19931216; JP H03107359 A 19910507; US 5070264 A 19911203

DOCDB simple family (application)
EP 90117541 A 19900912; AT 90117541 T 19900912; DD 34400390 A 19900914; DE 3930958 A 19890916; DE 59003445 T 19900912; JP 23886690 A 19900907; US 58224690 A 19900914